

Bessemer Valley Groundwater Basin

- Groundwater Basin Number: 7-15
- County: San Bernardino
- Surface Area: 39,100 acres (61.1 square miles)

Basin Boundaries and Hydrology

This groundwater basin underlies Bessemer Valley in eastern San Bernardino County. The basin is bounded by nonwater-bearing rocks of the Iron Ridge Mountains on the north and bedrock highlands on the south, and by the West Calico fault on the east and the Emerson fault on the west (Rogers 1967). An arm of the basin extends northwestwards following the Camp Rock and Emerson faults and is bounded by the Rodman Mountains on the east and the Fry Mountains and bedrock highlands on the west. Surface waters drain southward towards Galway (Dry) Lake. Annual average precipitation ranges from about 4 to 8 inches.

Hydrogeologic Information

Water Bearing Formations

The water bearing materials that form this basin consist of alluvium, fanglomerate, and playa lake deposits. Quaternary alluvium is the principal water-bearing material and includes included are the unconsolidated younger alluvial deposits and the underlying unconsolidated to semi-consolidated older alluvial deposits (DWR 1964). Wells in the basin yield as much as 60 gpm.

Holocene Deposits. The younger alluvium consists of Holocene age unconsolidated, undissected coarse gravel to sand deposited in alluvial fans with a maximum thickness of about 100 feet (Dibblee 1964, 1966). At Galway Lake, Holocene age silt and clay playa deposits are found. A well at the east end of Galway Lake is shown drilled in the younger alluvium, but dry (Dibblee 1966); however, no record is found for that well.

Pleistocene (?) Deposits. Older alluvium consists of presumed Pleistocene age gravel, sand, and silt of dissected alluvial fans at least 100 feet thick (Dibblee 1964, 1966).

Miocene (?) Deposits. Older fanglomerate and gravel deposits, that are presumably late Miocene to Pleistocene age, may underlie younger alluvial deposits and reach more than 1,000 feet in thickness (Dibblee 1966).

Restrictive Structures

The West Calico and Emerson faults bound the basin on the east and west sides (Dibblee 1964, 1966). The Camp Rock fault cuts through the northwest arm of the basin (Dibblee 1964). It is unknown whether or not these faults are barriers to groundwater movement.

Recharge Areas

The principal source of recharge to the basin is likely percolation of runoff from surrounding mountains, with likely negligible contribution from percolation of precipitation to the valley floor (DWR 1967).

Groundwater Level Trends

Unknown.

Groundwater Storage

Groundwater Storage Capacity. The total storage capacity is estimate at 740,000 (DWR 1975).

Groundwater in Storage. Unknown.

Groundwater Budget (Type C)

Natural recharge is estimated to be about 300 af/yr (DWR 1975).

Groundwater Quality

Characterization. Unknown.

Impairments. Unknown.

Well Production characteristics

Well yields (gal/min)	
Municipal/Irrigation	

Total depths (ft)	
Domestic	
Municipal/Irrigation	

Active Monitoring Data

Agency	Parameter	Number of wells /measurement frequency
	Groundwater levels	
	Miscellaneous water quality	
Department of Health Services and cooperators	Title 22 water quality	

Basin Management

Groundwater management:

Water agencies

Public

Private

References Cited

California Department of Water Resources (DWR). 1967. *Mojave River Ground Water Basins Investigation*. Bulletin No. 84. 151 p.

_____. 1975. *California's Ground Water*. Bulletin 118. 135 p.

Dibblee, T. W. Jr. 1964. *Geologic Map of the Rodman Mountains Quadrangle San Bernardino County, California*. U S Geological Survey Miscellaneous Geologic Investigations Map I-430. Scale 1:62,500.

- Dibblee, T. W. Jr. 1966. *Geologic Map of the Lavic Quadrangle San Bernardino County, California*. U S Geological Survey Miscellaneous Geologic Investigations Map I-472. Scale 1:62,500.
- Rogers, T. H. 1967. *Geologic Map of California, San Bernardino Sheet*. Single Map Sheet, Scale 1:250,000.

Additional References

- California Department of Water Resources (DWR). 1954. *Ground Water Occurrence and Quality Colorado River Basin Region*. Water Quality Investigations Report No. 4.
- Riley, F. S. 1956. *Data on Water Wells in Lucerne, Johnson, Fry and Means Valleys, San Bernardino County, California*. U.S. Geological Survey Open-File Report.

Errata

Changes made to the basin description will be noted here.